



# $\pi$ IN THE SKY<sup>5</sup>

Can you figure out what's disappearing inside Jupiter?  
A slice of pi will help you reveal this mystery like a NASA space explorer.

Explore the full NASA Pi Day Challenge at:  
[jpl.nasa.gov/edu/nasapidaychallenge](http://jpl.nasa.gov/edu/nasapidaychallenge)

## HELIUM HEIST

With a radius of 70,000 km, Jupiter is our solar system's most massive planet. About 10% of the volume from Jupiter's cloud tops to 20,000 km below is helium, with the rest being mostly hydrogen. Circulation in this molecular hydrogen layer causes some of that helium to be depleted as it moves into the liquid metallic hydrogen layer beneath. The tremendous pressure inside Jupiter condenses helium into droplets that fall like rain through the less dense liquid metallic hydrogen. The presence of helium rain inside Jupiter helps explain why scientists observe less helium in the clouds than expected.

If 10% of the helium volume in Jupiter's molecular hydrogen layer has been rained out since the planet formed, what is the volume in cubic km that has rained out?

Given that Earth's radius is 6,371 km, about how many Earth-size spheres of helium have been rained out?

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[solarsystem.nasa.gov/planets/jupiter](http://solarsystem.nasa.gov/planets/jupiter)

